SL-II MC-963/1
Time: 06:09 CDT, 21:11:09
6/14/73

PAO This is Skylab Control at 11 hours 9 minutes Greenwich mean time on the 21st day of the mission. And we're about 2 minutes away from Hawaii where CAP COM Hank Hartsfield will be putting in a call to the crew to wake them up to get them started on their day, which today includes EREP 11, Earth Resources Experiment Package 11, which will be occurring on the 446th and 447th revolution. The spacecraft is on track 20. This will be a 28-minute pass starting over Oregon, as the spacecraft comes in over Goose Bay, down across the four corners area and through - above Albuquerque, Brownsville, out over the Gulf of Mexico, and down across South America, ending about 500 miles south of Sao Paulo, Brazil. Also during the day, we'll have runs of the M072, M171 medical experiments, the lower body negative pressure, and the metabolic analyzer, using the bicycle ergometer. Also extensive ATM, Apollo telescope mount, operations, today. The M092/M171 experiment subject will be Pilot Paul Weitz, and the observer for the M092/M171 run will be Commander Pete Conrad.

CDR (Garble) you there?

CC Good morning. How are you this morning?

CDR Early to bed, early to rise. You know all that good jazz, but besides that, we never believed it. The circadian rhythm is better - never follow their own plans, but we thought we'd get up early this morning so we'd be in better shape to go to bed early tonight.

CC I thought maybe that might be what you were doing. We noticed somebody was up stirring around here about 45 minutes ago.

CDR Yeah, but we all got up about 10:00. Hank, the EREP VTS pad for that - not VTS, it should be ETC pad for the normal EREP pass - not the cal - got all garbled. So did the shopping list message. This is the first time we've really gotten a garble on both these messages, plus the last part of the EREP pad - second EREP pad that was sent was also garbled. It's not that lines are transposed - it, it's just flat screwed up. And also you refer to a general message 2120. Has that ever been transmitted?

CC It should be. Stand by and we'll check it. Let me make sure I got it correct now which ones are garbled. You say the ETC pad and the shopping list - two pads are garbled. Is that correct?

CDR That's correct. And the last part of the second EREP pad you sent. Now I've got a complete set of EREP pads, but you retransmitted the last one the second time for some reason. You got about halfway through that and it's all garbled too. I don't think I need that one. And it has the same message header on it as the first one did. I've got an EREP pad with a message header "211381" on it, and that's

okay. Now you had sent that one again, for some reason, and it was all garbled at the end.

CC Okay. Well, we suspected something like this might happen, Pete. We had a glitch at one of the sites when we were uplinking; so we kept all these things in the MOC here just in case. So those pads around the time we had the glitch, we're going to retransmit them.

CDR Yeah, message 2120 refers to the quiescent switch configuration. It's something or other, something or other. I don't think we ever got any 2120 complete, unless it was taped yesterday or something. I don't remember it.

CC Okay, 2120 should have been the last message up, Pete.

CDR Okay. Well, that didn't come through. Unless you transmitted something in the last 45 minutes. You better look.

CC Roger. We have.

CDR Okay.

CC Skylab, Houston. We're going to send to you then the ETC pad, the shopping list, and the EREP OPERATE pad. Does that agree with your list?

PLT Yes. Go ahead.

CC Okay; it may be stateside before we can get those up.

PLT That's all right. What's the status o. our CSM unknown 17 aft card grade, Hank?

CC Okay, we've got a message up concerning that. I guess what it amounts to is we think that the switch there has got a short in it or either the secondary coolant circuit has. We've looked at all the telemetry, and pretty well tracked it down that it is the heaters coming on in the secondary coolant loop. And that goes back and correlates with the glitch we had a lot earlier in the mission. Remember when we had the current spike. So we're pretty sure now that the switch is shorted on. In other words, the system's on - the heaters are on even though the switch is off. So when we turn the loop off, which we did last night to keep it from getting a MAIN BUS A undervolt, the loop warms up 'cause it's stagnant, and that's gets it below the - or above the trip point for the heaters, and so we don't have the current spike.

PLT Okay.

CC We're about 1 minute from LOS; we'll be coming up on Goldstone at 23.

PLT Okay.

SL-II MC-963/3
Time: 06:09 CDT, 21:11:09 GMT
6/14/73

PAO This is Skylab Control at 11 hours 20 minutes. About 3-1/2 minutes now from Goldstone, California. And on that pass over Hawaii, as CAP COM Henry Hartsfield was getting ready to put in the call - a wake up call to the crew, we heard a cheery "Good morning" from Commander Pete Conrad. The crew getting a bit of an early start on the day. A relatively active day, and includes a full run of ATM experiments, EREP 11, medical experiments M092 and M171, the lower body negative pressure and metabolic activities experiments. And we'll also have television of yesterday's M131 runs in the rotating litter chair, the motion sensitivity run, with Paul Weitz as the subject. Weitz, yesterday, was running at 25 revolutions per minute in a motion sensitivity run. And after that run was completed, he and Kerwin reported no motion sensitivity - adverse motion sensitivity feelings, and requested that the next runs be conducted at 30 revolutions per minute. Skylab now on its 444th revolution of the Earth, and about 2 minutes from acquiring signal through Goldstone, California.

CC Skylab, Houston through Goldstone 5-1/2 minutes.

PLT Roger.

END OF TAPE

SL-II MC-964/1
Time: 06:23 CDT, 21:11:23 GMT
6/14/73

CDR Hello, Houston; CDR.
CC Go ahead.
CDR (Garble) in answer to question 1, fire sensor CT392 and fire sensor 392-2 were changed out on day 161. Not only do you think, but we think the fire sensor 392-2 is (garble). That's why we never did (garble). And we have (garble) on the control panel. That one side of it is in fact, good. So we are taking care of that one.
CC Outstanding.
CDR We were also glad on the odds and ends (garble). Good to see that y'all finally recognized that (garble) when you (garble).
CDR (Garble). I think the question (garble) PC starters (garble).
CC Roger.
SC All three of us.
CC Skylab, Houston. Yesterday you reported that the flow in the wardroom hot water was going down, and I guess the only thing that comes to our mind right off the top is to check that the pressurization valve on water tank 7 is open. You've probably already done that. That's the only thing we could come up with immediately.
SC We looked. And I suddenly got that input, because the last time we took a shower, all the pressure we could get in the shower bottle was 22 psi. What should the pressure be coming out of that water heater? Does anybody know?
CC Stand by and let me see if I can get an answer on that.
SC Okay. No rush, Henry. If that's supposed to be up around - Your system pressure has 35; so whatever losses we have - and it seems to be pretty close to 35 all the way through it. I guess though you take the water bottle and stick it on the outlet side of the water tank itself and see what the pressure is coming out of the tank.
CC Okay. Let us smoke that one over a little bit.
SC Okay.
CC Skylab, Houston. We're about LOS. We'll be coming up on Bermuda at 32.
SC Roger.
CC Skylab, Houston through Bermuda 10-1/2 minutes.
SC We heard you.
CC Skylab, Houston. For the CDR, I got some comments on M553 whenever it's convenient.
CDR Go ahead.
CC Okay. What we'd like to do this morning, Pete, when you get to the 553, is run the remaining samples on wheel 1. And if the beam sticks on like it did, we want you to step on through each sample as quickly as possible,

being sure not to exceed 2 minutes continuous beam operation. And if you hear that clicking noise that you reported, we'd like for you to terminate and wait for the chamber to vent down. Most likely the clicking is the high voltage over-current relay attempting to remove the power because of the pressure rise.

SC Well, that was not indicated by the pressure gage yesterday. But I think (garble) much more. I agree with that.

SC Roger. But where I left it on stand all night last night; so I should have a super good hard vacuum in there.

CC Okay.

SC Did AG get my message about the fact that the fingers are retracted, but the balls aren't departed, didn't he?

CC Roger. We did.

END OF TAPE

SL-II MC965/1
Time: 06:36 CDT, 21:11:36 GMT
6/14/73

CC CDR, Houston. Whenever it's convenient, I have an update for your lunar cal operate pad.
SC Okay, just a second.
SC Fire away.
CC Okay, Pete. Where it says 36 minutes S193 RAD to STANDBY - Right above that is S192 MODE to STANDBY, and we omitted the time there. It should be 35:50.
SC Got it. Is that it?
CC That's all there was to it, and did - We transmitted those three messages. They should be on board now.
SC Thank you, sir.
SC Hey, Henry - something for FAO to think about. We just finished up and don't need any more of the half urine - of the urine sample half bags or half urine sample bags, whatever you want to call it. We'll be more than glad to resupply that for Captain Baines if you want us to. You've got to tell us where to get the replacements though.
CC Okay, we copy.
CC And, Skylab; Houston. We're about 1 minute from LOS; Ascension at 50.
PAO This is Skylab Control at 11 hours 44 minutes Greenwich mean time. In about 6 minutes we will again be acquiring Skylab over the Ascension Island Tracking Station. During that stateside pass, one of the things discussed with the crew was the M553 experiment, which uses the manufacturing facility resembling a diver's helmet to fabricate spherical shapes by taking advantage of the virtual absence of the gravitational field. That experiment to be performed in one of its modes today. And coming up on revolution 446 and 447, we have the 11th and final Earth resources pass of this mission. EREP pass 11 is scheduled to acquire data over an approximately 7,000 mile long track that extends from the Oregon coast across Nevada, New Mexico, the lower Rio Grande River Valley, Texas, Central America, and from the Pacific coast of Columbia on through Brazil, Bolivia, and to the Atlantic Ocean, near Portalegre, Brazil. Analysis of the data acquired will be used in gaining a greater understanding of the major geologic features of the basin and range province of California and Nevada. Also the spectral and spatial capabilities of various sensors will be tested over White Sands, New Mexico. That information will be used in improving understanding of lower Rio Grande Valley soil distribution and insect infestation. It will also insist in studies of volcanic activity in Central America and in determination of natural resources of Columbia, the upper Amazon River Valley in Brazil, and Bolivia. Also imagery from the S190A and S190B cameras will aid Costa Rica, Honduras, Nicaragua, and El Salvador in mapping studies of these countries. At 11 hours 46 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC966/1
Time: 06:48 CDT, 21:11:48 GMT
6/14/73

PAO This is Skylab Control, at 11 hours 49 minutes. We'll be talking with Skylab through the Ascension tracking station in about 1 minute. At the present time the planning shift headed by flight director Neil Hutchingson is completing activities in planning tomorrow's flight schedule. And we're also in the process of a shift handover here in Mission Control. Flight director Phil Shaffer preparing to relieve flight director Hutchinson. And we anticipate a change of shift briefing this morning to occur at about 8:45 a.m. central daylight time.

CC Skylab, Houston through Ascension for 9-1/2 minutes.

CC Skylab, Houston to Ascension, 8-1/2 minutes.

SPT Roger, Houston.

CC And in answer to the question about the (garble) sample urine bags, the next supply is stored in vault 426.

SPT Vault 426.

CC And also got an answer on checking the pressure. You can use the portable water tank to check the pressure at water tank 7 outlet. And if you get good pressure at that point then we suggest you take the water tank and the WMC 1 hose down to the WMC and measure the pressure at the water heater dump port.

SPT Okay.

PAO This is Skylab Control. We have had loss of signal now through Ascension and will be acquiring in 21-1/2 minutes at Carnarvon, Australia. The spacecraft now in the 445th revolution of Earth. At 12 hours 1 minute Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC-967/1
Time: 07:20 CDT, 21:12:20 GMT
6/14/73

PAO This is Skylab Control at 12 hours 21 minutes Greenwich mean time. We'll be talking to the crew through the Carnarvon, Australia Tracking Station in about a minute. Coming up this afternoon at 19:00 Greenwich mean time, or about 2:00 p.m. central, the crew will be turning off the fuel cells in the CSM, which have been supplying about 1100 watts needed for CSM operations, and they'll switch over to supply the 1100 watts needed by the CSM from the power generated by the solar panels from the workshop. The workshop is currently consuming about 4700 watts of power - -

CC - - through Carnarvon for 10-1/2 minutes.

SPT Hello Houston, this is the SPT and I have a question about DAC exposures for out - the - window photography. Yesterday I wrote down that you gave me f/5.6 at 1/250 if the whole roll was to be used exterior. And today's pad says f/11 out of 1/500, I would like to verify that.

CC Okay. Stand by.

CC SPT, Houston. There's some confusion on this thing. We're convinced that the f/11, 1/500 is the correct setting.

SPT That's what we used.

CC And I have a map update, whenever you want to listen to it.

SPT Come ahead.

CC Okay. We're - Little flare update - active region 27 had a subbright flare, a Charlie-4 X-ray at 0335 Zulu. And there was also a Charlie-2 X-ray event at 520 Zulu with no associated optical flare. Active region 37 is still complex and it's a probable X-ray source. There's a new region, active region 41, 290.8, emerged just east of active region 37 and a small rapidly growing bipolar spot group.

SPT Roger, Hank. We reported seeing that one last night, it looks very interesting. We're rooting for it.

CC Roger.

CC Skylab, Houston. We're about 30 seconds from LOS, Guam at 35.

END OF TAPE

SL-II MC968/1
Time: 07:32 CDT, 21:12:32 GMT
6/14/73

PLT Still there, Houston?
CC Roger.
PLT Quick question, Hank. We just put the shower bottle on the outlet of tank 7 and the gage went to 22 psi, to verify the gage on the shower water bottle, we would like to pressurize it to line pressure out of the 35 psi into REG. Is that okay?
CC Okay, we'll have an answer in Guam for you.
PAO This is Skylab Control. We've had loss of signal through Carnarvon and we'll be acquiring at the Guam tracking station in about 1-1/2 minutes. Again as we mentioned at the start of that Guam pass today at 19:00 Greenwich mean time or 2:00 p.m. central daylight time crew will be switching the fuel cells off in the CSM, having nearly depleted the consumables for the fuel cells. At that point we'll begin transferring about 1100 watts to the CSM from the workshop, that power previously supplied by the fuel cells. The workshop is presently operating at a level of about 4700 watts. That will be required to supply a total of about 5800 watts when we begin transferring 1100 to the CSM. And EGIL reports that we have plenty of margins with a capability from the solar panels of about 6800 watts with an additional 500 watts of margin and equipment that could easily be powered down if need be to give us additional power margins. But it appears that we'll have adequate electrical power from the solar panels to maintain operations at the current level.
CC Skylab, Houston through Guam for 9 minutes.
CDR Roger, Hank and we verified through the portable water bottle that we do, in fact, have 35 psi nitrogen and I'm suspicious of the gage on the shower tank.
CC Roger. We think it's a good idea to - what Paul suggested - is take in the shower bottle and taking it and verify the gage with a 35 psi source. We should have thought of that.
CDR Okay.
CC Skylab. Houston for info we're reconfiguring your gyros for daytime configurations.
PLT You there, Houston?
CC Roger, for about 6 more minutes.
PLT Okay, this gage reads all right. We just put it on the servicing - and it went right up to 35. So I guess the answer you owe us there is why is the pressure out of tank 7 22 psi?
CC (Garble)
PLT When you figure that out you get a gold spur.

SL-II MC968/2
Time: 07:32 CDT, 21:12:32 GMT
6/14/73

CC Okay, on the pressure you just checked was the outlet of the water tank 7? You checked the gage and it's okay. Have you checked the outlet at water tank 7?

PLT Yeah. That's why we've been trying to check the gage. I don't see any way that we could have 35 psi going to the watering manifold and have 22 psi out of the tank. And that's what it is.

PLT And that 22 psi, Hank, I unhooked the new WMC hose to the water tank 7 outlet and hooked the water - the shower water bottle into it and we only got up to 22 psi which is what we get out of the WMC water heater.

CC I think we're discovering some new physical principle here. Everybody is scratching their heads. We'll see what we can come up with.

PLT Why do you think we finally came to you guys? We wanted you to be as sound and as well as us at this zero g principle, whatever it may be.

CC Roger.

PLT Another question, Houston.

CC Go ahead.

PLT Okay, now we've got that shower water bottle full of cold water, is the flow rate too much to go ahead and dump through the waste water dump line?

CC That's okay. Go ahead.

PLT All right.

CDR Houston, you there?

CC Go ahead.

CDR Say that waste water - yeah, all the water tanks - those are metal bellows in there do you suppose that there's any way that they could have gotten destroyed enough to be dragging down the side of the wall before they get extended and that we're losing 10 or so psi across the bellows by just dragging down the other side of the tank?

CC We're thinking that. We thought of that too. We're not right sure yet.

CDR Great minds think alike.

CC Skylab, Houston. We're about LOS now. We'll be coming up on Goldstone at 31.

CDR Okay.

END OF TAPE

SL-II MC-969/1
Time: 07:47 CDT, 21:12:47 GMT
6/14/73

PAO This is Skylab Control, about 13 minutes now from regaining contact through the Goldstone Tracking Station. The discussion over Guam about the water tank pressure had to do with the fact that the crew noticed curiously enough that there's a pressure difference in the inlet to the outlet of water tank number 7. There should be no pressure difference here. And there's been a fair amount of discussion back and forth as to what could be causing the 13 pounds of pressure difference. There's no concern over it, but it is a matter of curiosity, as to how the tank could be reading a different pressure at the inlet and the outlet. And Pete Conrad and the crew aboard scratching their heads, as we are on the ground, in an attempt to come up with an explanation. At 12 hours 49 minutes Greenwich mean time, this is Skylab Control

END OF TAPE

SL-II MC970/1
Time: 08:00 CDT, 21:13:00 GMT
6/14/73

PAO This is Skylab Control, at 13 hours Greenwich mean time. Coming up on Goldstone, and we'll stand by for the crew call and conversation over this stateside pass.

CC Skylab, Houston; stateside for 17 minutes.

CDR Okay, Henry, there's a big water tank mystery. I have another data point for you if you're ready.

CC Okay.

CDR Guess what the pressure out of water tank 1 is? Well, I won't make you guess. It's 24 psi out of water tank 1.

CC What did you measure that with?

PLT (Garble) our faithful little water bottle that we've been carrying around measuring everything with. On the fact that we said it was 24 out of tank 1, and 22 out of tank 7, I think it's (garble) level. With the same guage we have measured water pressure out of tank 1 at 24, out of tank 7 at 22 and nitrogen pressure out of panel 500 at the portable water bottle servicing port of 35.

CC Copy.

PLT So what we've come up with then is a basically a built in force in the bellows to return to the full position until (garble).

CC Roger, and you use the shower water bottle for that?

PLT Yeah.

CC Is that bottle full, or do you know?

PLT Well, I started with 10 PSI of nitrogen in it and we got a total of 24 PSI in there now. The rest of the pressure haven't been made up of water. So you guys tell me how full it is.

CC Okay, copy.

PLT Also, for correlation (garble), let me give you some numbers on how far those bellows have moved in those two tanks when you're ready to copy.

CC Go ahead.

PLT The water tank 1 is 32 and a quarter inches from the end. And in water tank 7 it is 11 and a quarter inches to the end. And of course, those are measured from the pressurization valves and their tanks.

CC Roger, copy.

CC Well, I guess we'll have to track this down later in the day here, maybe during one of the housekeeping periods here. We'll smoke it over until then.

PLT Okay.

CC And, Skylab, Houston; and we recommend

SL-II MC970/2
Time: 08:00 CDT, 21:13:00 GMT
6/14/73

that we don't check anymore water tanks with the shower bottle since we've used it on the WMC system there.

PLT — Okay.
CC — Your mike's keyed open.
PLT — (garble) commence shift work. Sweepers man your broom, sweep down fore and aft, carry all trash to the airlock.
CC — That whistle is kind of weak at 5 PSI.
CDR — (Garble) So is the bosun that blew it.
CDR — Hey, Hank, you still there?
CC — Roger. We got about 9-1/2 minutes.
CDR — Okay. On that 553, I got it to run again but by hook and by crook. And I diddled around with the focus again to make sure I got it on the end of the ball and all that good stuff like we were told to do with - the camera will tell how well I did. But it doesn't melt those balls right. You get about half a ball melted on the knob and just as it starts to melt on the bottom the (garble) draws and shuts the beam off. And I'm just not meeting with very good success at making ball bearings. I look at the lights and there are all kinds of funny looking things. Some stay on and some come off, so - but the single retract and there is a couple of them were (garble) (garble) and the thing retracted and cut it off.
CC — Roger, copy.
CDR — Hey, I got all wheel 1 done and I'm letting it cool down now and I'll collect what's in there and put wheel 2 in there and see what I can do with it.
CC — Okay.
SCHWEIKART — The worst that could happen if you did that is that - -
SC — All right, Rusty.
CC — Wrong buttons.
PLT — Houston, the flight surgeon has just conducted his daily sanitary inspection, and the food and water systems are both acceptable except for human consumption.
CC — Roger, copy.
CC — Skylab, Houston; for the CDR. In regard to the (garble) there, I guess the only thing we could suggest is perhaps on wheel 2 to try to have the beam strike the sample up a little closer to the tip. Maybe we could avoid melting that thing off of there before it's ready.
SC — (garble) pretty well there.
CC — Okay.

END OF TAPE

SL-II MC-971/1
Time: 08:15 CDT, 21:13:16 GMT
6/14/73

CC Skylab, Houston. We'd like to get a couple of questions answered on this shower bottle. You dumped it there between readings. I guess we'd like to know where you dumped it, which connection you went into?

SC We haven't finished dumping it yet.

CC The (garble) output?

SC We're dumping it through the waste compartment - the waste management compartment dump line.

CC Okay. Was that above or below the sink there - the squeezer?

SC It's in the inlet to the dump line which is normally hooked up to the squeezer dump cord. It is the one up at the top of the water heater.

CC Roger. Copy.

SC Is that all right?

CC We'll let you know. We know where you dumped it now.

SC I didn't dump it all at once. That pressure in the tank got up to about 08; so I stopped to let it come down a little bit before I dumped some more.

CC Roger.

CC And you did dump prior to checking water tank 1?

SC Negative.

CC Say again.

SC Negative. I did not. We checked water tank (static). Then we checked the nitrogen side. Then we checked water tank (static).

PAO This is Skylab Control. We've had loss of signal now through the Bermuda Tracking Station; 40 minutes away from reacquiring at Carnarvon, Australia. Spacecraft now on the 446th revolution. And on our next stateside pass, we'll be coming up on another Earth Resources Experiment pass, EREP 11, which will be the final EREP pass scheduled for Skylab II, which will be acquiring data over an approximately 7000-mile-long ground track that extends from the Oregon coast across Nevada, Mexico, the lower Rio Grande River Valley, Texas, Central America, and from Columbia, through Brazil and Bolivia, to the Atlantic Ocean near Portalegre, Brazil. At 13 hours 21 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC972/1
Time: 08:28 CDT, 21:13:28 GMT
6/14/73

TAO This is Skylab Control at 13 hours 29 minutes. We'll have a change-of-shift briefing at 8:45 central daylight time in the JSC News Center briefing room. Flight Director Neil Hutchinson will be the participant in this press briefing. Hutchinson and his team of flight controllers are handing over at this time to the team headed by Flight Director Phil Shaffer. And the capsule communicator, the CAP COM, on the upcoming shift is Astronaut Richard Truly, who will be relieving Hank Hartsfield at the CAP COM console. Again, that change-of-shift press conference to occur in about 15 minutes at 8:45 a.m. central daylight time. This is Skylab Control.

END OF TAPE

SL-II MC-973/1
Time: 08:59 CDT, 21:13:59 GMT
6/14/73

PAO This is Skylab Control at 14 hours Greenwich mean time. About a minute away from acquiring at Carnarvon on the 446th revolution. Also, our change-of-shift press briefing will begin shortly in the Johnson Space Center briefing room. We'll come up for this pass, take the line down as soon as the press conference is ready to begin, and tape record any subsequent conversations with the crew. We'll stand by at this time for acquisition of signal and the call through Carnarvon.

CC Skylab, Houston. We're AOS at Carnarvon. We've got you for 6-1/2 minutes, and I've got some things I need to talk over with the SPT.

SC Hello, Houston. (Garble)

CC Hello there.

SC Okay, Richard. First I've got two questions for you on the EREP stuff this morning. Want you to verify which magazine you want on the DAC. You gave me one magazine but the location for the other one. And also I want to verify - Do you want to shoot the first site, site 320? You want to do that one over again?

CC Okay. We'll be getting those answers for you.

SC Okay. Go with your questions.

CC Okay. We've been looking ahead to the upcoming cal maneuver, and I've got some pad changes to read up. And most of them - one of them is on the EREP operate pad. All the rest are Joe's. One's on the cal maneuver pad, and also a comment on the ETC pad. So I thought if Joe could collect those pieces of paper, and then when he's ready to talk to me a little bit about them, we might have a little conversation about those.

SC Okay. Just give me a minute.

CC Okay.

SC Go ahead, Richard.

CC Okay. First thing, let's take a look at the cal maneuver pad, Joe. We've ah - We're now in the situation where we've done our last dump prior to the maneuvers. And we've taken a look at Nz, and it's - and ah - Your pad for cal - for the maneuver pad for cal, which the number of the pad is 2124 Alfa.

SC I've got it.

CC Okay. I've got a change about 10 lines down under the fine maneuver for Z. It now reads 50050 and 4 degrees. I'd like to change that number; it should read 50064 to plus 05.2 degrees. And the reason for that change is ah - ah - our better knowledge of Nz.

SC I copy the fine maneuver Z is changed from 50050 to 50064.

SL-II MC-973/2
Time: 08:59 CDT, 21:13:59 GMT
6/14/73

CC Okay, Joe. I also have a change to the startracker pad, if you have that one - just the outer gimbal, for the same reason.
SC Come ahead.
CC Outer gimbal - the correct outer gimbal on the startracker pad - and the pad number is 2129. Outer gimbal is plus 2053.
SC Okay. Plus 2053.
PAO This is Skylab Control. Our change-of-shift press briefing is ready to begin at this time. We'll switch to the Johnson Space Center briefing room and record subsequent conversations, during the briefing, with the Skylab crew. This is Skylab Control at 14 hours 5 minutes Greenwich mean time.

END OF TAPE

SL-II MC-974/1
Time: 09:23 CDT, 21:14:23 GMT
6/14/73

PAO This is Skylab Control at 14 hours 24 minutes Greenwich mean time. During the change of shift briefing we accumulated a little over 8 minutes of tape. We're now about 14 minutes from reacquiring at Goldstone for the start of the EREP pass number 11, and we'll play back our accumulated tape through - collected over Carnarvon and Guam.

CC Okay, Joe. Let's look at the ETC pad next.

SPT The one for cal?

CC Negative, it's the one prior to the cal. It's message number 2115.

SPT I'll be with you in a second. I left that one down at the camera.

CC Okay. I'll tell you Joe. I think this one is real simple. I can tell you you might no want to go get it. What I - I have 2 things to talk to you about on ETC Pad. One is, the filter on this pad says none, it should read 5, which will get the 2 pads in sync. Both of the filters read - should read 5 and there's no filter change required between maneuvers. And the second thing is, as we - for today. When you connect the vacuum to the Earth terrain camera, we want to make sure you leave the vacuum connected whether or not you hear a hissing sound. Over.

SPT Okay. Leave the vacuum connected, regardless. And I don't think I'll have a problem, because this canister was okay the last two times we used it.

CC Roger. We concur. Okay. I have one more pad change and one final thing to talk to you about. The last pad change I have is on the EREP operating pad. And that's normally going to be Pete's, but if you could get it for me I would appreciate it. The pad number is 2113 Bravo. Bravo 1 is the actual - the upper left-hand corner number.

SPT Okay. Is this the EREP OPS for cal or the ah - for the pad?

CC Negative, Joe. It's EREP-11 operating pad.

SPT Okay. We've got you, go ahead.

CC Okay. On this one, it was just a goof on my part. We need an extra entry at time 15:04:00.

SPT Go ahead.

CC S193 Alfa, range 81.

SPT S193 Alfa, range 81, and 15:04:00.

CC That's affirm. And that'll set that instrument up for the proper elipticity of our orbit. Okay. I only have one more thing to mention to you, Joe. And that is, we want to make sure that we get some more Y-axis scale factor data if we can during your EREP cal sequence. Incidentally, I just noticed we're just coming up to LOS here at

SL-1I MC-974/2
Time: 09:23 CDT, 21:14:23 GMT
6/14/73

Carnarvon, about 10 seconds to go. We're going to have Guam coming up at time 14:15. So why don't I get this last note up to you right there. And I'll have the other answers at Guam at AOS.

SPT — See you at Guam.

CC — Okay.

CC — Skylab, Houston, we're AOS at Guam. We've got you for the next six minutes The answers to the PLT's questions are, that we do want to repeat site 320. The correct DAC magazine is Bravo-Hotel-02, and the proper location for that, we think, was Juliet-4, J-4. And I need to talk again to SPT. And Joe, it might help if you had the EREP checklist to the EREP calibration timeline on page 13-12. Over.

SPT — Okay. Just a minute. Caught me in that forward area, again.

CC — Roger. We realize we've been taking up a lot of your time here.

SPT — Go ahead, Houston.

CC — Okay, Joe. You looking at the - I assume you're looking at page 13-12.

SPT — I was looking at 13-3. Wait a minute.

CC — Okay. I'm looking at the EREP calibration timeline, the overview page that shows the sequence of maneuvers.

SPT — Okay.

CC — Okay. Essentially, where we'd - We'd like to - In addition to what's on this, we'd like you to throw one switch for us on the star tracker at a particular point in order for us to get some more Y-axis, the scale-factor dated during the cal sequence. Going from left to right on your column down there, and having put together the times off of your various pads, the start of the solar inertial maneuver is at ah - that's in the left hand corner. It's at 15:08. It's a 12-minute maneuver and it'll end at 15:20. And we'll also have the Vanguard acquisition at the start of that maneuver, but then you'll go LOS after that. Then between 15:20 and 15:23, 15:23 is the place where the little dark triangle is. And that's where you go to ATT HOLD CMG. During that period, you'll get - the star tracker will lock on to that gimbal that I gave you awhile ago, plus 2053. And at that point, right after going to ATT HOLD CMG, we'd like you to cycle the star tracker switch to MANUAL and then to AUTO. That's the only addition to this sequence. And then 15:24 is the final enter on cal maneuver number 1. Over

SPT — Okay. I've got it. Star tracker MANUAL, and then AUTO, immediately after going ATT HOLD CMG.

CC — Okay. And incidentally, if you don't get a star, if you - don't waste your time hunting for a star, because we'll take what we get on that.

SPT Roger.

CC Okay. Now that we've used up a bunch of your time, Joe, and you were supposed to have been doing this mal for us on secondary coolant loop, why don't you let us know where you are in that, if you've started it at all. We'd like to also tell you that the - we recognize that there is a filter change in order to start this first PTC pass coming up here at the states. And if we have to we're willing to postpone this malfunction and go through and - depending on where you are.

SPT The filter change is complete. The procedure is complete up through connection of the PCU, LSU and verification that we're in position 1. And I'm ready for - to get on up there and start to pump on your mark.

CC Okay. We've got 2 minutes left on this pass, why don't you head up that direction while we pull ourselves together.

SPT And, I'm waiting for you Houston.

CC Okay. We're GO, looking at our data. We've still got a minute and 15 seconds here, so why don't you press right on.

SPT Okay. We're at PRIMARY.

CC Okay.

SPT Now we're OFF.

CC SPT, Houston. Be advised we may go - We've got the recorders running. We may go LOS during this test. We want you to continue right on and finish it, but we do want to do this on SUS 2, SUS 2.

SPT Roger. Sorry. I'll start it over again. You want me to keep right on going through prim for 15 minutes, huh?

CC That's affirmative. We're recording it. We'll watch it as long as we can see you. We're going to see you at Goldstone at 14:39.

SPT Roger.

PAO This is Skylab Control. That brings us up to date with our tape playback. And we're about 5 minutes 45 seconds from Goldstone acquisition. As we lost contact over Guam we were discussing with Joe Kerwin and Paul Weitz a procedure for further troubleshooting and verifying the coolant loops, the airlock coolant loops. And the procedure being discussed was with coolant loop number 2 of the secondary loop, a procedure which involved cycling the temperature control valve to gain added assurance that that valve is modulating as it should. And we'll be getting additional data on this stateside pass to determine, if in fact, that valve as it appears is functioning normally. The weather for the EREP pass, coming up on this revolution and on into revolution 447, appears to be, again, a fair amount of clouds, a fair amount of cloud cover. Now we have the weather map up on the

SL-II MC-974/4
Time: 09:23 CDT, 21:14:23 GMT
6/14/73

monitors for the stateside portion of that pass. And you can see as the ground track comes over Oregon, there's heavy cloud cover for a small portion of the track that breaking out into four to seven-tenths, four-tenths to seven-tenths, or 40 to 70 percent cloud cover, on across Oregon and into Idaho, again hitting pretty solid overcast through Idaho and most of Utah, and on into Nevada, and breaking out pretty much into the clear, with exception of one small patch of cloud cover in Nevada, on across New Mexico, and into Texas, mostly clear, zero 3/10ths cloud-cover. And again, hitting fairly heavy clouds along the south Texas coast and into central Texas, and then clearing out over the Gulf of Mexico. This EREP pass, EREP 11, will be on track 20. And as the last EREP pass scheduled for this mission, data gathered on this EREP pass will be used in understandin, the geologic - geographic features of the basin and range problems of California and Nevada, and also will be useful in determining the spectral and spatial capabilities of sensors. These tests will be run over the White Sands area of New Mexico. Also, information will be gathered on valley soil distribution of the Rio Grande Valley, as well as information on insect infestation. Volcanic activity will be studied in central America. And natural resources studies will be conducted from data gathered over Columbia, and also over the upper Amazon River Valley of Brazil, and on into Bolivia. Imagery from the S190A and S190B cameras will aid Costa Rico, Honduras, Nicaragua, and El Salvador, and cartographic studies of these countries. We have about 2 minutes now before we acquire signal through Goldstone. And again, we will expect the crew, as they have on previous EREP passes, to have their mikes in the VOX mode, the voice-operated mode, so that we're hearing all of their conversation as they activate and turn off the various instruments, and call off targets that they'll be sighting through the view finder tracking system.

END OF TAPE

SL-II MCT75/1
Time: 09:3C CDT, 71:14:36 GMT
6/14/73

CC Skylab, Houston. We're AOS stateside for the next 16 minutes. Standing by.
SC Roger. How do you read the CDR VOX?
CC Loud and clear, Pete.
SC Hey, while I've got a minute here, Houston, you want to do that H2 vent before we shut the fuel cells down. Is that correct?
CC That's affirmative. We want to make sure that it's working properly.
SC Okay.
SC MARK 39 minutes.
CC Skylab, Houston. No response required, but just for your information, Rusty and the guys went over to run the simulator and ran this set of pads for the EREP cal maneuver yesterday, and it turned out pretty good.
SC Okay.
SC 91 READY light on time.
SC And the ALTIMETER is ON. Show an ALTIMETER UNLOCK light. P92 MODE READY. Bravo 7 is 30.
SC On ALTIMETER UNLOCK light, the mode is 1; the range is 70. That's blinking a little - it may be coming in.
SC 90 to MODE AUTO at 41:13. Joe, you're going to have an ETC AUTO at 42:12.
SC (Garble).
SC Once again, Houston, where do you want - -
SC 54 - MARK, ALTIMETER to STANDBY.
SC I had to just swing my star tracker to AUTO and leave. I don't know if we're going to get a star lock-on or not.
CC Roger; understand. It's okay.
SC 42:12, ETC to AUTO.
SC Got it.
SC MARK, ETC STANDBY.
SC Got it.
SC And S193A is MODE 2.
SC MARK. 43:45 SCAT to STANDBY, RAD to STANDBY. At 47:53, the ALTIMETER is ON.

END OF TAPE

SL-II MC976/1
Time: 09:44 CDT, 21:14:44 GMT
6/14/73

CC Skylab, Houston. No response required. We're going to handover from Goldstone directly to Mila here in a few seconds. We'll probably drop out about 30 seconds and be back with you.

CC Skylab, Houston. We're AOS at Mila again; we got you for the next 6 minutes. Standing by.

CC And, CDR; Houston, be advised we're not reading you if you're transmitting on VOX anymore.

SC Apparently not.

SC Houston, you read the SPT?

CC SPT, Houston. I read you loud and clear. Y'all did drop out for a few minutes there. I stopped reading the CDR on VOX.

SC But I can hear it (garble).

SC Hello, Houston. How do you read the PLT?

CC Loud and clear, PLT. How me?

SC Loud and clear.

SC Did you get that no joy on (static) 385, Dick?

CC Negative. I didn't copy that. Say it again, please.

SC No joy on ATS site 385. All the clouds are in the wrong places.

CC Copy.

SC How do you read the CDR?

CC Loud and clear, Pete.

SC Okay. MARK 49 (static)

SC Uh, Houston. On the next site, 566, - -

SC MARK.

SC - - do I get a (garble) 66 is clobbered. Can I pick up 65 and or 64 also?

CC That's affirmative, PLT. Press right on.

SC Okay.

SC SCAT to STANDBY, RAD to STANDBY; 9). POWER OFF. Looks pretty hazy down around the Corpus area also. (garble) you're really doing it in in this EPS. You might pass that on to Juck (garble).

CC Roger, Paul. Copy.

SC 50:02, the ALTIMETER is ON.

SC Interealometer to 8. 51, crosstrack contiguous; POLARIZATION is 4.

CC Skylab, Houston. See you got a little hole here in this thing. We've terminated (garble) recording; so we'd to - we'd like to get the SUS pump off while you're still AOS. It's panel 217, SUS 2 PUMP to OFF, if possible. We still got 2 minutes to go prior to LOS.

SC I'll do it.

CC Okay.

SL-II MC976/2
Time: 09:44 CDT, 21:14:44 GMT
6/14/73

SC Say, Houston, can you just reset the frames on S190 in the middle of a run?
CC Stand by.
CC CDR, if you switch in the middle, it'll reset when you go to STANDAY; so it's okay.
SC All right.
SC You guys keep coming up with these trickies I've never seen before.
CC Roger that, we're 45 seconds from LOS. We're going to see you at Vanguard at 15:03. We're going to dump the data tape recorder there and we sure appreciate 'all working in that malfunction procedure for us.
SC That's one you owe us.
SC You still there, Houston?
CC Yes, sir.
SC Okay, I got (garble) 66 on that but not the other two. And (garble) is a little shakey also. Hard to tell one knob from another in there.
CC Okay.
SC ALTIMETER to STANDBY; 5338. intervelometer going to 10. MARK, intervelometer to 18. It'll be 54. We're standing by (garble) hours (static) come on.
SC (Static on (static)
PAO This is Skylab Control.

END OF TAPE

SL-II MC977/1
Time: 09:5- CDT, 21:14:54 GMT
6/14/73

PAO Skylab Control. We've gone out of range now of the Texas and Mila tracking stations. Skylab completing its EREP pass down over Central America, crossing into Columbia from the Pacific oceanside and out over Brazil, exiting on the Atlantic on this, the 11th and final, EREP pass of the mission. And we have about 9 minutes remaining before we reacquire the spacecraft at the conclusion of this EREP pass through the tracking ship, Vanguard. EGIL, the environmental systems engineer, got a good look at data on the coolant loops during that pass and reported the loops appear to be functioning normally and the temperature control valve cycling as desired to maintain the proper loop temperature. At 14 hours 55 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC978/1
Time: 10:02 CDT, 21:15:02 GMT
6/14/73

PAO This is Skylab Control at 15 hours 2 minutes. Less than a minute now from acquisition through the tracking ship Vanguard. We're getting a replay on that excellent bit of video from the ATM that was dumped to the ground earlier today and brought back in during our last pass over the continental United States. This is ATM video that is stored on the onboard video tape recorder earlier today. And it was a very clearly evident active region - active region 27 that showed up near the lower limb of the Sun on that ATM video. Also on the white light coronagraph we're told that a bright spot visible in one of the corona - streamers of prominences at about the 10 o'clock position was the planet Saturn. We show acquisition now. We'll stand by for the call to the crew through Vanguard.

CDR READY MODE, READY. But for 15:04 we'll put the range to 61 on S193.

CC Skylab, Houston; we're AOS at Vanguard for 8-1/2 minutes.

SC 81:00 on the altimeter. Roger, Houston.

CC Roger, read you loud and clear. Standing by.

SC 04:20 MARK, 92 to CHECK.

CC SPT, Houston I wonder if you've got a little block in between callouts there. On the ETC lunar cal pad there is another mistake. We found the DBC data block exposure control for the cal pass ought to be four just like it is for EREP 11 pass. There's no change required to that.

SC Okay, copy that.

CC Thank you, Joe.

END OF TAPE

SL-II MC-979/1
Time: 10:05 CDT, 21:15:05 GMT
6/14/73

SC 05:12, that's 190 to MODE STANDBY,
READY light was OUT on time.
CDR 05:38, MARK. ALTIMETER to STANDBY.
SC MARK 05:44 MODE 5.
SC MARK 05:53 the ALTIMETER is ON.
SC Six minutes 94 MODE MANUAL.
CDR Getting occasional ALTIMETER LOCK lights.
CDR Still getting ALTIMETER on LOCK lights.
SC MARK, 7 minutes.
SC MARK, 07:48, MARK, ALTIMETER STANDBY.
07:54, MARK, EREP STOP. Stand by for 15:08, START SI MANEUVER.
Okay. Stand by for 15:12 for LC SET UP.

END OF TAPE

SL-II MC-980/1
Time: 10:08 CDT, 21:15:08 GMT
6/14/73

CC Skylab, Houston. We're about 40 seconds from LOS. We've got a long LOS. We're going to see you at Goldstone at 16:15, and you can tell us what the Moon looks like.

SC Okay. We'll see you.

CC Okay. See you later.

PAO This is Skylab Control; out of range now of the tracking ship Vanguard, and a little more than an hour away from reacquiring at Goldstond California. Prior to losing our radio contact, Flight Director, Phil Shaffer, requested that each of the flight controllers take a good look at the data on the spacecraft before losing contact for this extended period of time, before we come all the way back around to Goldstone. And everything, from all reports, was normal. The last remark to the crew from CAP COM, Dick Truly, was something to the effect of, you can tell us how the Moon looks. The crew will be looking at the Moon through the view finder tracking system as an attitude reference for pointing the S192 multispectral scanner at the Moon. At 15 hours 15 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC981/1
Time: 11:14 CDT, 21:16:14 GMT
6/14/73

PAO This is Skylab Control. We're about a minute now from acquiring at Goldstone, California. This will be our last Goldstone pass of the day as we reach the portion of the ground track where we have a rather scanty ground station coverage. This revolution we'll pick up Goldstone and the tracking ship Vanguard only. Next revolution it will be Hawaii and Vanguard is the only two stations to acquire. We have acquisition of signal now, we expect CAP COMM, Dick Truly, will be giving a call to the crew shortly.

CC Skylab, Houston. AOS at Goldstone for 7-1/2 minutes.

SC Okay, Houston. You can mark the H2 vent - the H2 pressure at this time. I just opened the H2 vent before you came up.

CC Roger, CDR. We don't have data right at the moment. We're working on a little ground problem, but appreciate you telling us.

SC Okay, well, I just (garble) caught up and try to watch and look at it in (garble).

CC CDR, Houston, roger. And be advised, we also been talking about the H2 vent. We do want to make sure it works. We got a Vanguard pass coming up here and we'll - when we get data back we'll take a look here at Goldstone and also at Vanguard and if we can confirm that it's working right we'll probably let you secure it.'

SC Okay.

CC And one more thing, Pete. A piece of information I'm not sure you have on board but if the tanks drop 20 PSI, that's enough and we'd like to secure the vent.

SC Okay, and I have it on board.

CC Roger.

CC And Skylab, Houston. If you have time sometime this pass - still got 6 minutes, we'd be interested to know how the calibration against the Moon went.

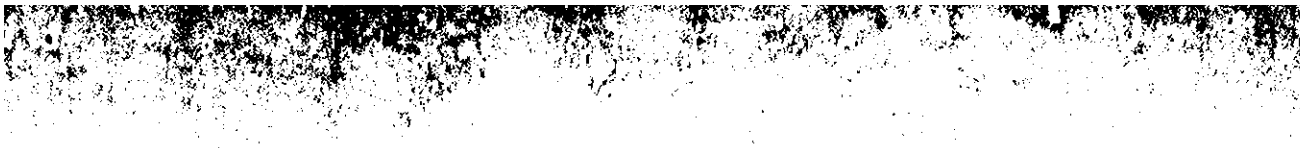
SC Okay, the calibration went fine except for one loose nut on the (garble). The CDR left the FFC in on the first set of pictures but we had enough time to take the second set of pictures with the FFC out and then return and get the first set of pictures with the original filters correctly, so we got it all.

CC Very good.

SC Also for information for the (garble) guys Dick, the VTS gimbal angles, once we got the attitude, were left about a half as many as I could interpolate and up about 7-1/2 which is pretty good when you shift from (garble) zero in 0. And - and (garble).

CC Roger. Thank you.

END OF TAPE



SL-II MC-982/1
Time: 11:21 CDT, 21:16:21 GMT
6/14/73

SC There's a couple of stowage notes on B-channel along with EREP data - about EREP for follow on crew (garble).

CC Okay. Good. Thank you for letting us know. And we'll let the stowage folks know.

CC Skylab, Houston. We see the star tracker (garble) is messed up. We'd sure appreciate it if somebody could help us get a reacquisition, because we need that prior to doing a good dump maneuver.

SC Okay. I'll get it.

CC Thank you.

CC And, Pete. A final note on H2 vent. When you do verify that the - you've dropped 20-PSI, we'd kindly like to know about how long that. And and also when you get to that point, request FANS and HEATERS on both H2 TANKS to AUTO. And that'll keep us in good shape.

CDR Okay.

CC Skylab, Houston. We see you fixing the star tracker up for us. We sure appreciate that. We're about a minute from LOS. We're going to see you at Vanguard at 16:41. And we're going to dump the data tape recorders at Vanguard.

SC (Garble)

PAO This is Skylab Control. That will be all from Texas and Goldstone for today. We'll be acquiring tracking ship Vanguard in about 14 minutes. At the present time the recovery people here in mission control report that C-1, rather a C-5 aircraft is being loaded now with the Skylab mobile laboratory, the medical facility for conduct for immediate postflight portions of the Skylab medical experiments, to which the crew must be transported within an hour after splashdown. And the laboratory is airlifted from Houston's Ellington Air Force Base out to San Diego, where it will be loaded on the prime recovery ship. And it will be on station during the final week of the mission, ready for recovery. Earlier today, a C-141 aircraft with the experiment return containers departed Ellington for San Diego. At 16 hours 28 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC983/1
Time: 11:40 CDT, 21:16:40 GMT
6/14/73

PAO This is Skylab Control. We're up a little early over Vanguard with acquisition and response from the crew.

SC Houston, SPT. You there?

CC Skylab, Houston. If you called, say again, please.

CC Skylab, houston. We lost you for a little bit there. If you said something, say again, please.

CC Skylab, Houston. I thought I heard you try to call, and we dropped S-band there for just a second. If I did, I didn't - If you did, I didn't copy. You might say again. Incidentally, we predict that the H2 vent will be complete at approximately 17:15, which is about 30 minutes from now.

SC Okay, thank you. And Hank, I was calling you to ask about ED31, which I see is on the shopping list. And I'm concerned about returning it because we do not have the IMSS resupply container on board. It will be unable to chill the plates. I want to verify that that's okay, and I'll give that the PI would perfer not to wait until the next flight.

CC Roger. Stand by, Joe.

SC Another question, Dick. What, if any, are the constraints on starting the power transfer to housekeeping 60 Alfa?

CC SPT, Houston. We plan on bringing ED31 back possibly in the food overcan. That's already been discussed; so it's okay to go ahead and do that if you have the time in your shopping list. And we don't have an immediate answer on the questions about the HK60 Alfa, but we will at the next AOS, which is Hawaii at 17:49. And we're about 20 seconds from LOS here.

SC Roger. And when do you want the H2 vent terminated?

CC The time on - The time we predict from looking at the data on the H - on the H2 vent is about 17:15.

SC Thank you.

CC Skylab, Houston. Word from the FCIL - you can proceed with HK60 anytime you get to it in the Flight Plan.

PAO This is Skylab Control. We've now have loss of signal through Vanguard and during that pass gave the crew a go ahead to shut down the fuel cells at any point they are ready to. And when they reach that point in the Flight Plan, the estimate was that that would occur between 18:20 and 18:30 Greenwich mean time, over then about the next hour and a half. And as we said, the crew given a go ahead to shut down the fuel cells on the CSM as soon as they reach

that point in the Flight Plan. When the fuel cells are shut down, a planned operation in recognition of the fact that the CSM fuel cells are running out of consumables, the liquid hydrogen and liquid oxygen, which are converted into electricity through an electrochemical process - and when those fuel cells are shut down, 1100 watts of power will be transfered to the CSM from the workshop power generated by the solar panels. The workshop is now operating on about 4700 watts of power. The 1100 watts needed by the CSM will bring this total to 5800, and we have a capability at the present time from the solar panels of about 6800 watts. So we would appear to have a good margin of power ever after beginning the transfer of 1100 watts to the CSM.

END OF TAPE

SL-II MC-984/1
Time: 11:52 CDT, 21:16:52 GMT
6/14/73

PAO - - transfer of 1100 watts to the CSM. The next station to acquire will be Hawaii, and that will be 56 minutes from now. The spacecraft currently in its 448th revolution. At 16 hours 53 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-1I AC985/1
Time: 12:46 CDT, 21:17:46 GMT
6/14/73

PAO This is Skylab Control, at 17 hours 47 minutes Greenwich mean time. About 3 minutes now from acquiring signal through the Hawaiian Island tracking station. And on this pass over Hawaii among the things that we're expecting to discuss with the crew are the power transfer operation, the shutdown of the fuel cells. They were given a go ahead to do that early if they reach that point in the flight plan. And we expect there's a good possibility that when we acquire them we'll find that the fuel cells are shut down, and they're in the process of transferring the power from the workshop to the CSM, about 1100 watts transferred to the CSM. Also, we've given the crew a go ahead to perform ED 31, one of the student experiments. This is the bacteria and spores experiment, the objective of which is to determine under controlled conditions the survival growth and mutations of selected bacteria in a Skylab environment. And we have acquisition of signal and data.

CC AOS at Hawaii for the next 6 minutes.

SC Roger.

PAO And our telemetry data - -

CDR CDR.

CC Go ahead.

CDR Okay, we transferred power, the fuel cells are shutdown the H2 vent is still open; the only question that I have is, what would you like me to do with that cryo HO2 venting? It is rigged but the poly choke is not on.

CC Roger. Stand by and we'll get you word on that.

CDR Thank you.

CC And Skylab, Houston, last pass I guess you guys were looking at our message we sent up on the shopping list and you mentioned ED31. Probably we would like to make some changes in the protocol, particularly along with the number of frames of photography and so forth due to some of the film on board that may have been degraded due to the earlier high temperatures. So we would be interested to know if you do plan on doing ED31 and we'll be sure and get the right pad up to you.

SPT Yeah, Houston, I'll try to delete ED31. There are a number of things I need. One is a photo pad with your recommendation as to the film and the camera to use. I suspect I have a choice of cameras. And I also need a recommendation as to the approximate length of time between the different photographic episodes. That's not in the checklist. And I need your recommendation as to stowage for return.

SL-II MC985/2
Time: 12:44 CDT, 21:17:46 GMT
6/14/73

CC Okay, Joe, we will work up all those things for you. And if you could give us an idea as to when you think you might have time to go ahead and set it up, it might help us - it might make us change our mind on a couple of items, the detail items.

SPT I'd like to get to it tonight after supper.

CC Okay, we got the people working on it right now. We'll try to have a pad up to you today.

CDR (garble) Dick, I can put 73 back in operation here and we'll do that starting right now. Be advised that I am doing M553-2, but it is a long, slow, and painful process that will probably take me the rest of the day.

CC Roger, Pete, on 553, and flight just wanted me to let you know that M092 and 171 comes - outranks it.

CDR Oh, no problem there. It's just that I - you just can't run it off in rapid - fire succession. It's got to cool after every one and (garble) off. But we're clicking them off when we have time. You got us restricted to when we can start 92 and I have some time right now, so I will put 73 back in commission PR2.

CC Roger, understand. Thank you much.

PLT Hello, Houston.

CC Go ahead.

PLT I just checked the S190 desiccants that are baking out. They are a beautiful deep blue color and apparently are not usable. Now all it said was to put them in fecal bags and put them back in M130. I think it would be a very good idea to change out the existing desiccants that are in the camera now. I propose to - -

END OF TAPE

SL-II MC-986/1
Time: 12:52 CDT, 21:17:52 GMT
6/14/73

SC (garble) you have the existing desiccants that are in the camera now. I propose to put six of these in the camera now, bake out the six I put out, and change them again just before we left. Think about that.
CC Okay. We'll do that very thing.
SC And I will be waiting, just hanging on the speaker waiting for your word.
CC Okay.
CC SPT, Houston. We believe on the building block you're on, on H-alfa, we should be clicking off four frames per minute, (garble) 1. And for the CDR - As far as command module configuration goes now, Pete, we'd like to leave the cryo O2 in the present configuration. We would like, for both H2 tanks, HEATERS and FANS to OFF.
CDR They are in fact off, and the H2 vent is open.
CC Thank you.
CC Skylab, Houston. We're 1 minute from LOS. We're going to see you at Vanguard at 18:17. And in answer to the PLT's question, we think that's a super good idea. Change out the desiccants in the camera, take the ones that are in there and go ahead and start baking them out, and we'll probably schedule another changeout for you later.
SC Okay.
PAO This is Skylab Control. As you heard during that pass over Hawaii, the crew has configured the CSM so that the fuel cells are now deactivated and power is flowing from the workshop to the CSM - about 1100 watts, scheduled to keep the CSM in its present relatively stable and state of operation and readiness. A short while ago the ATM officer, Apollo telescope mount expert, in the Control Center reported that an active region that we've been watching and another one that appears to be forming have given us a fairly high probability of a flare. The ATM Officer said that we may have as much as a 50, 50 chance of a flare developing this afternoon in this particular active region of the Sun. And we have the photograph of one of the TV pictures taken this morning on the TV monitors now. If you look towards the eastern limb of the Sun, you'll see area 37 and area 41. Area 37 is an active region that has been producing some sub-flares, which has been followed closely. But next to it is a small bright spot designated active region 41. It's felt that there is a fairly high probability that these two active regions will begin to interact, increasing the possibilities of a flare. If a flare does occur this afternoon, the crew aboard Skylab should be in a pretty good posture to observe it. Now there are several periods of ATM activities scheduled throughout the afternoon. That will be an item of interest to keep an eye on.

SL-II MC-95C/2
Time: 12:52 CDT, 21:17:52 GMT
6/14/73

We'll be regaining radio contact with Skylab in about 18 minutes through the tracking ship, Vanguard. At 18 hours Greenwich mean time, this is Skylab Control.

END OF TAPE

Time: 13:16 CDT, 21:18:16 GMT
6/14/73

PAO This is Skylab Control at 18 hours 17 minutes Greenwich mean time. And we're about a minute from regaining contact with Skylab through the tracking ship, Vanguard, off the coast of South America. Skylab now completing the 448th revolution; ready to start revolution 449.

CC Skylab, Houston. We're AOS at Vanguard for 9 minutes.

SC Roger, Houston. S073 prep 2 is complete, and I'm just getting ready to extend it. We'll be on 92 - 171 on time.

CC Very good.

SC Just to keep FLIGHT happy.

CC He's grinning from ear to ear.

SC I find that hard to believe.

CC And, Skylab; Houston. Be advised we're reconfiguring the CBRM and wall heaters post-normal - post EREP commands. And also I have some information on FINE REG ADJUST that we'd appreciate y'all doing wher you can, which is necessary after we've done the command module power transfer.

SC Okay. I'll get my FINE REG ADJUSTER out of the (garble) and send him on his way.

CC Okay. We got 8 more minutes left in this pass; so when he's ready to listen to what we want, I'll be glad to read it up.

SC He's on his way to Houston in a speeding bullet.

SC You're (garble).

CC Did I copy you're ready to listen?

SC Affirmative.

CC Okay. Paul. On REG BUS 1 ADJUST, we want that counterclockwise, approximately 30 degrees, which ought to result in about a 7 amp decrease in PCG total 1 current. And on REG BUS 2 ADJUST, we want that one also counterclockwise, about 10 degrees, and that ought to result in about a 2 amp decrease in PCG total 2 current.

SC Okay. I read about 48 to 60 on board now. Is that about where you want it?

CC Stand by.

CC PLT, Houston. We're very happy with the adjustment that you made, and we're satisfied with this configuration.

SC Okay.

CC SPT, Houston. On the ATM console our spies on the ground are watching you doing your sunside work and are a little bit confused as to exactly where you are in the - in this particular pass. And if you get a chance this time, you might let us know how things are going.

SC I'm not sure I don't want to keep them in the dark. I can usually tell by looking at H-ALPHA. I'm

SL-II MC-987/2
Time: 13:16 CDT, 21:18:16 GMT
6/14/73

in the JOP 6. I'm in the second part of the JOP 6. The X-ray TELE is finishing up (garble). We're not going to finish everything. Obviously we're getting too close to ESS, but that's where we are.

CC Okay, Joe. Thank you much.

CC SPT, Houston. The question that we just asky you about where you are on ATM makes us think we possibly might have a teleprinter problem in numbers. We thought you ought to be doing a building block 2 vice a building block 1. Incidentally, we're about 30 seconds from LOS. We're getting ready to have a long LOS period. We're going to see you at Hawaii at 19:24. We've got about 30 seconds left.

SC Okay. And while you're LOS, you can ponder the fact that the teleprinter is okay but think of all the extra data you got.

CC Roger that, Joe.

END OF TAPE

SL-II MC-988/1
Time: 13:27 CDT, 21:18:27 GMT
6/14/73

PAO - - We've had loss of signal now through Vanguard, about 57 minutes until we resquire at the Hawaiian Tracking Station. All systems look good as the vehicle went out of range, including the electrical power situation where the crew has shut down the CSM fuel cells and are transferring power now from the workshop to the CSM. At 18 hours 28 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-1I MC-989/1
Time: 14:23 CDT, 21:19:? GMT
6/14/73

PAO This is Skylab Control in Houston; 19 hours 23 minutes Greenwich mean time. We are some three-quarters of a minute away from acquisition of the Skylab Space Station through the Hawaii tracking site, as we are about to terminate revolution 449. We'll stand by for half a minute or so and wait until CAP COM calls up to the crew.

CC Skylab, Houston. We're AOS at Hawaii for the next 10 minutes, and we're going to be dumping the data tape recorder this pass.

SC Okay.

CDR Houston, CDR. How about working up a pad time for program 0A on 73 that doesn't interfer with recorders for me sometime.

CC Well, as a matter of fact, Pete, I have here a mission note for you that has some information on S073, mode 0A, and I was - and I was just trying to figure out exactly when to call you because I wasn't sure how busy you all were and if you could listen.

CDR Go ahead.

CC Okay. On the program start, we want to use the ATM DC clock. Start the program at 7 minutes prior to sunset on any rev after M092. The REP should be 36 - 3 6, and the rest of the setup is per the checklist.

CDR Seven minutes prior to sunset on the ATM DC REP 36, REP the same. I got it.

CC Roger. I wasn't sure I copied how you read that back. But that was 7 minutes prior to sunset. And I also have another note here for you on the polychoke setting. If you have time, we'd like to get it set to orifice number 2, which corresponds to 13 pounds per day, and insure, of course, that the vent valve and hose have been hooked up to this side hatch prior to doing this. And if you do this, it will allow us to look at the data this afternoon, prior to you guys going to bed.

CDR Yeah, I'll get it on right away. And then that hose is rigged, the orifice is off, and I'll put it on, turn it off.

CC Okay. Good show. Incidentally, we haven't forgotten your guys' request on doing something about the wardroom window. And we do have some people looking at two or three ways we might could get that moisture out from between the panes, and we'll be getting back to you on that.

CDR Okay. Thank you.

CC SPT, Houston. When you get a chance, the startracker appears to us to be locked on something moving. You might try reacquiring. Your startracker pad on board is okay.

SL-1I MC-989/2
Time: 14:23 CDT, 21:19:23 GMT
6/14/73

SPT Okay, Houston. What do you think? Seems to be particles floating across this pad. We have to examine it every now and then.

CC Roger, Joe. We believe that's what's happening, and unfortunately it seems to be happening quite often today, and I'm bugging you guys about it. But we think it probably is little light particles or something.

SPT Okay.

SC Probably is added hydrogen.

CC Roger.

CC Skylab, Houston. We're about 1 minute from LOS; we're going to see you at Vanguard at 19:56. And incidentally, Pete, either here or at Vanguard, we'd appreciate you letting us know how much of the S073 you did get done today, because it will affect what we're going to schedule for you tomorrow. And in the event you did take the option of going ahead and photographing your prep for S073, and you haven't done that yet - I understand you asked the question earlier, but the information for that M151 setup is on the SAL checklist, page 8-1. And no response required now if you're busy.

CDR No, I got it all done. I did an M151 with it per checklist. It's a two rod extension right now. I will get program 0A run tonight. The polychoke is on and running on orifice position 2.

CC Outstanding. Thank you much.

PAO Skylab Space Station has moved out of range of the Hawaii tracking site. We will acquire again over Vanguard in 21 minutes. At 19 hours 35 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC-990/1
Time: 14:55 CDT, 21:19:55 GMT
6/14/73

PAO This is Skylab Control, Houston at 19 hours 55 minutes GMT. Some 45 seconds away from acquiring the space station over the Vanguard Tracking Site. Standing by for air-to-ground.

CC Skylab, Houston. We're AOS at Vanguard for 8 minutes.

SC (Garble).

CC SPT, Houston. Be advised since the way the star tracker's been acting up today, we don't want to let it keep updating Nz with bad data. So what we intend to do is issue a command to the star tracker to inhibit it from changing the value of Nz and ATMDC And - So if you'll give us the DAS, we'll go ahead and issue that command.

SC You got it.

CC Okay.

CC Skylab, Houston. Be advised of the result of our troublshooting early today and you guys running through that malfunction procedure. We think we've determined in the airlock module secondary coolant loop that that thermal control valve is still possibly hung up. However, this time it appears to be hung up closer to the - its normal temperature control point. But we're not real sure and we're continuing to look at the data and we'll keep you informed.

SC Okay.

CC Skylab, Houston. If you did extend the SO73 awhile ago when we were talking, and we're a little confused about whether you did or not, we probably ought to get power on it so we don't have any freezing problems. We've still got about 2 minutes left in this AOS here at Vanguard. Following this one we're going to have a whole rev and see you again at Vanguard, if there's anything you need to talk about then (garble).

CC And SPT, Houston. The DAS is your's. We're through with our command.

SPT Roger that. And the CDR says he will put power in 73.

CC Okay. Thank you much.

PAO We've had loss of signal with the space station, and will next acquire them again over the Vanguard Tracking Site in 1 hour and 29 minutes. At 20 hours 4 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC991/1
Time: 16:31 CDT, 21:31:31 GMT
6/14/73

PAO This is Skylab Control, Houston; 21 hours 32 minutes Greenwich mean time. The Skylab space station is about a minute from acquisition of signal again through the Vanguard tracking ship. We would like to announce that there will be a Change of Shift Briefing at 5:30 p.m. central daylight time in the News Center Briefing room with the off-going Flight Director Phil Shaffer. We've had a long period during the time when the space station has been out of contact with the ground. Essentially we had the last contact at Vanguard. We have circled the Earth once and are now about ready to regain contact again. We'll stand by for the air to ground over the Vanguard tracking site.

CC Skylab, Houston. AOS for 10 minutes.

CDR Hi there Bill. How are you tonight?

CC Oh, pretty good.

SC Say again.

CC You broke up on that one. Say again.

CDR SO73 is off and running on time.

CC We copy.

CC Skylab. LOS 1 minute. AOS Ascension 21:47 and we will be dumping the tape recorder at that point.

CDR Roger, Houston.

PAO The Skylab space station has passed out of range of the Vanguard tracking site. We will pick it up again over Ascension in about 2-1/2 minutes, so we'll leave the line up for another call from CAP COM Bill Thornton.

END OF TAPE

SL-II MC992/1
Time: 16:44 CDT, 21:21:44 GMT
6/14/73

CC Skylab, Houston. AOS for 10 minutes.
SC Roger, Houston.
CC And, Skylab, be advised we're going to be running the MDA heaters such that they're about 60 degrees, and this may cool the OWS over the next few days. If you find this objectionable, let us know.
SC Okay. We don't think so. If - You can notice a couple of degree change in here though. We're quite sensitive to increase in temperatures in the workshop, especially on the ergometer.
CC We copy that.
CC Skylab, LOS in 1 minute. Guam 22:31. And we show the TACS not inhibited. We would like to have the TACS inhibited.
SC (garble).
PAO We've had loss of signal from the - with the Skylab Space Station at the Ascension tracking site. We'll acquire again in 32 minutes at Guam, over the Guam tracking site. A reminder that at 5:30 p.m. central daylight time, there will be a change-of-shift briefing in the News Center briefing room - News Center briefing room with the off-going flight director, Phil Shaffer. At 21 hours 58 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL_II MC-993/1
Time: 17:10 CDT, 2?:22:10 GMT
6/14/73

PAO This is Skylab Control, Houston at 22 hours 10 minutes Greenwich mean time, with an advisory that the USAF C-5A Aircraft with six units of the Skylab mobile laboratory and approximately 50 Johnson Space Center medical engineering and recovery personnel departed Ellington Air Force Base at 1 minute after 5:00 today central daylight time for San Diego. There, the personnel will debark from the aircraft and the SML, or Skylab Mobile Lab, will be placed aboard the USS Ticonderoga, the recovery ship. And the recovery ship then tomorrow will sail from San Diego for the recovery area, which is located some 700 to 750 nautical miles west by south of San Diego. Anticipated time of arrival of the C-5A is approximately 3 hours from its takeoff time, which should make it about 8:00 p.m. central daylight time. At 22 hours 11 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC-994/1
Time: 17:45 CDT 21:22:45 GMT
6/14/73

PAO This is Skylab Control, Houston, at 22 hours 45 minutes Greenwich mean time. During the change of shift briefing, the Skylab space station was in contact with the ground through Guam. We recorded about 6 minutes of conversation, and we will play that back to you at this time.

CC Skylab Houston. AOS 9 minutes.

SPT Roger.

CC SPT, Houston.

SPT Go ahead.

CC The VTR is now empty. We would like you to get XUV data. You have 27 minutes available on the recorder.

SPT I don't think you want that much XUV.

CC Just voice sequences.

CC PLT, Houston.

PLT Go ahead.

CC Paul, would you consider setting up a S073 mode 4A prior to going to sleep tonight? It'll run all night for 10 revs, it should take about 5 to 10 minutes to set up. And although, mode 4A was run several days ago, only able to get 5 of 10 filters. And if we get this we'll essentially complete the 4A scan tonight.

PLT Okay, let's have it.

CC We'll send the pad up for that then.

PLT All righty. Good enough.

CC Skylab, have one or two news items if it won't interrupt any thing.

PLT Good, go ahead.

CC In case you haven't heard the President's speech last night, he is going to invoke a 60 day price freeze, that's based on the first 8 days of June. Wages and on the farm prices will be excluded from this. And they are considering looking at some profits, a possible roll back on that. At the end of the 60 day period, he is going to come up with a phase 4 program, again attempting to control prices. The money dealers said that this was too little and too late today. The price of a dollar slumped in European money markets, while gold jumped. It closed Wednesday at 115.75. Also rose in price, in carats closing at 116 dollars an ounce, also.

PLT I think we'll stay up here, Houston.

CC We copy that.

CC Kissenger briefed members of Congress today, on the new Indo-China cease fire agreement. But offered a little prospect of any let up in the US bombing of Cambodia. In other words, it's till a camp ground. It's still a

SL-II MC-994/2
Time: 17:45 CDT 21:22:45 GMT
6/14/73

battle ground, Kissenger was quoted as saying. In Albuquerque, 41 people were left up in the air, not quite as high as you are, but they were stranded in 2 cable cars on the west face of the Sandia Mountains. They supposedly set a safe and comfortable night before rescuers began. They are going to try to lift the cars back onto the cables by crane or helicopter, and carry back the passengers down this 10,000 foot mountain. The cars were stalled Wednesday night in a extreme gust of wind caught them as they were being stopped. In case you are going to south Padre Island, Texas which is the newest town in Texas, they have just elected a new sherriff who is a 27 year old, red headed mother of two. She says I'm a mean red head and if they ever call me pig, they had better be careful, I might take it the wrong way. And in case there are any boat fans aboard, there is a new world speed boat record for ocean racing. It was set by Dr. Benomi of Rome in an off shore race. The boat is 36 feet, it has (garble) 468 cubic inch 600 horse engines, record time of 63.2 as compared to the old record of 73.1.

END OF TAPE

SL-II MC-995/1
Time: 17:50 CDT 21:22:50 GMT
6/14/73

CC - an off shore parade. The boat's 36 feet. Has two key (garble) 468 cubic inch, sixty horse engines. Record time of 83.2, as compared to the old record of 53.1. And the Sun is out today and everybody is sweeping the remnants of the water out of their houses in Friendswood. And we'll probably have a dry spell for awhile. Come to think of it, maybe you people are well off where you are. We will be LOS in 1 minute. Vanguard AOS at 23:10. You should have on board a one copy of the flight plan, evening questions and the CDR details.

SPT Roger, Houston.

PAO That concludes the conversation that we recorded over the Guam tracking site a few moments earlier. We're about 18 minutes from acquisition at Vanguard. At 22 hours 52 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC-996/1
Time: 17:55 CDT 21:22:55 GMT
6/14/73

PAO This is Skylab Control Houston at 22 hours 55 minutes Greenwich mean time with an announcement. "The NASA Manned Space Flight Management Council met today at the Johnson Space Center, Houston, and discussed various plans with respect to the sunshade on the Skylab space station. No decision with respect to deploying another sunshield was made. Additional discussions are scheduled tomorrow." At 22 hours 56 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-1I MC-997/1
Time: 18:09 CDT 21:23:09 GMT
6/14/73

PAO This is Skylab Control at 23 hours 10 minutes. We're about 3/4 of a minute away from acquisition at the Vanguard tracking site on what will be the start of the 452nd revolution. We will also be in contact with the spacecraft through Ascension, the Canaries and Madrid. We have an evening status report set and a medical conference set during that time frame. So we'll stand by for Capcom Bill Thornton's call to the crew.

CC Skylab, Houston. AOS 10 minutes.

CDR Hi there, Houston, I was about to say Skylab. I don't know where I am. Ah, Houston, are you ready for the evening status report?

CC We're standing by for the status report.

CDR Okay, the CDR had a particularly difficult struggle today because this field day is my first field day. There's a couple of items on there that are bad enough to gag a maggot. However, under the direct strain I managed to get it all down plus two butter cookies.

CC We copy that.

CDR And three optional salts. The SPT, suffered the same hardship, managed to get his down today also.

CC Copy.

CDR However, the PLT, did not eat his corn for lunch, nor his coffee with sugar for a snack, and he had plus 1.5 Delta H_2O, and zero optional salt.

CC Is he all right today, not eating salt?

CDR He's not allowed any.

PLT I'm allowed a half a pack, yippee.

CDR Okay, for the photo status report. 16 millimeter. We start with an EREP pass. C211, 00, C225; Then we got an M151 flash, EPC stow, Charlie India 06, 40, Charlie India 03. We got an EREP 11, with a Baker Hotel 0255. We got a M553-1, Charlie India 05, 00, Charlie India 01. We got a M553-2, Charlie India 06, 35. Charlie India 03, We got a M151-1. Charlie India 10, 00, Charlie India 08. We got a S073 prep 2. 2 rod extensions, Gamma 151, Charlie India 09, 66. Mike Tango 03. 35 millimeter, we have Charlie India 30, with a 36 frame count. Charlie India 28, with a 28 frame count. 70 millimeter, Charlie X-Ray 06, 103. ATC, we had 389 on one run, 410 on the other. CAL sequence done twice, both ETC mags unloaded. Film in (garble) Pox 27. The EREP set 2 Quebec was depleted. And the drawer A configuration, A1 is 0, 2 Charlie India, 05, 00, Charlie India 01. A2 03, Charlie India 06. 35, Charlie India 03, A3 is 06, Charlie India 10, 00, Charlie India 08, A4 is 05, Charlie India 11, 00, Charlie

SL-II MC 997/2
Time: 18:09 CDT 21:23:09 GMT
6/14/73

India 25, and floating is 07, Charlie India 09, 66, Mike Tango 03. Changes for the flight plan, you've got. We added the S073. No changes in stowage or anything else and SPT's got the answers to some of your questions. My question on how long did it take to vent 20 PSIs. I'm going say about 45 minutes because I quit timing it after you guys gave me the time --

END OF TAPE

SL-II MC-998/1
Time: 18:14 CDT 21:23:14 GMT
6/14/73

CDR - - my question on how long it took to vent 20 psi. I'm going to say about 45 minutes, because I quit timing it after you guys gave me the time to shut it off, but I did glance at it. It looked to me like about 45 minutes for that last 20 psi.
CC We copy, Pete.
CC Someone asked if you ever heard of Speedy Rigs?
CDR Speedy Rigs, no. Who's he?
CC I'll tell you one day.
CDR He's the faster talker who asked my wife about telling Goldilocks and the Three Bears in exactly 60 seconds.
CC We copy, Pete.
SPT Houston, SPT.
CC Go, SPT.
SPT Okay, evening questions, number 1. They were painted green and they are in the 2 holes provided for them on the experiment. Shame on you.
CC We copy.
SPT Okay, the M092 sail settings were all changed by us on either the first or second run, we really don't remember, and subsequently about 2 runs after that for each of us. The card readings being used are CDR 6, SPT 9, PLT 8. Correction on that the CDR said he did not go to 6, and he stayed at 7 after his initial change. Our (garble) are all out of line with the restraint system, so we're okay. We're not cheating, in other words. But, you do tend to ride lower in that thing in zero g.
CC Copy.
SPT Okay, as far as the (garble), it's working fine. There are no technical problems with it. Unfortunately, there hasn't been any significant activities for it to catch. So I can't tell how useful the tool is going to be.
CC We copy.
SPT And on M172. I haven't thought up any specifics on changes. I think for the manned restraint system, it's going to hack it. I think it's all right. I'd rather have a more positive lock device on the shoulder straps, but it's too late for that. We're making do fine with what we've got. As far as the CAL, Bill, the tray lids rattle and if you're happy with gray tape, okay. And some new drastic needs need to be come up with if you want to use M509 batteries and stuff like that because there really is no hope for them in the present scheme. Over.
CC Copy, Joe. And did I copy that the red, that the lead rattle on the trays, and the trays themselves

are they firmly attached to the adaptor?
SPT They appear to be. The numbers looks pretty good since I starting gray taping the lids onto the trays. That's what it was. You could hear them go click clack, click clack, every time the chair moved.
CC Okay. Would it be practical to tape the 509 batteries in and not attempt to hold them with the straps.
SPT I don't think so, because they're too heavy. The lids aren't so heavy. The other thing, even on the empty chair care, you have got to be careful how you secure the, the shoulder straps, because if they're floating around it makes a difference, you can see it in the data. I've got a question for you, Houston. I asked about ED31 this afternoon, and if I'm to do it, and start it this evening, I need a photo pad.
CC Stand by half.
SPT Have you got one for me?
CC Stand by just a second, Joe.
SPT Okay.
CC Joe, while we're waiting for that, what about C clamps or something else like that on those 509 batteries?
SPT It's possible, Bill. I haven't worked with them. I think that's something you can determine as a trainer.
CC Okay.
CC That ED31 pad should be up at Ascension.
SPT Went fast, it's getting late?
CC We copy.
CC Joe, one last question on that 172 CAL. That 2-1/2 hours you think is the realistic figure for, if you maintain the procedure that we've been using?
SPT Now that was with a real jury rig for the batteries and so on, which I don't think was very good any way. You can cut it now to an hour and a half, if you've got some quick and easy ways of securing them on because taping the lense doesn't take very long.
CC Copy.
CC We're going LOS here in approximately 1 minute. There will be AOS at Ascension at 23:27. And the med conference at 23:32. Madrid will be out of action on this pass at 23:36.
SPT Roger that, Houston. And I assume that if we do get the ED31 pad it will be okay to use the VTR, to televise that.
CC That's affirmative.
PAO The space station has moved out of range of Vanguard tracking ship. And we will acquire it again in about 5 and 1/2 minutes.

END OF TAPE

SL-II MC-999/1
Time: 18:22 CDT 21:23:22 GMT
6/14/73

PAO - - has moved out of the range of the Vanguard tracking ship, and we will acquire it again in about 5-1/2 minutes. We will keep the line up for the Ascension pass, and for the pass over the Canary Island.

CC Skylab, Houston. AOS 4 minutes.

CC SPT, Houston.

CC Skylab, Houston.

SPT Go ahead.

CC We were unable to get the ED31 message up because of a check point. However, there are only two very simple essential changes, if you can copy.

SPT Come ahead.

CC The first is simply to save the overcam for return and stowage. And the second one is, that no photos are needed for the preparation. It other wise is per checklist. We will be sending this pad up later, but you can proceed at this time.

SPT Okay, I will. And I will count on you tonight, some time to send up appropriate photo pads for examination and time schedules for that.

CC That's is affirmative. We're going to medical conference here at approximately 15 seconds.

SPT Okay.

END OF TAPE

SL-LL MC-1000/1
Time: 18:35 CDT 21:23:35 GMT
6/14/73

CC And Skylab, we'll be LOS here in about 30 seconds. We'll have you over Guam at 00:08.
PLT Hey, Bill, I didn't hear the teleprinter on that pass. Did you get that S073 pad up here?
CC It should be up, Paul.
PLT Okay
PAO The Skylab space station is still within range of the Madrid tracking site, however the Madrid station at this time on this pass is down, and we will not get air to ground through Madrid. So our next contact with Skylab will be at approximately 26 minutes over Guam, again. At 23 hours 42 minutes, this is Skylab Control.

END OF TAPE

SL-II MC-1001/1
Time: 19:07 CDT 22:00:07 GMT
6/14/73

PAO This is Skylab Control, at 7 minutes Greenwich mean time. In 7 minutes into the new day, day 166. We're about a minute and a half away from acquisition of the Skylab space station at Guam site. During the last pass over, or during the pass over Canary, the last one over Canaries, the crew held the daily medical conference with the surgeon. And I have his report. It is a very short one, and I'll quote, "The crew continues to be in excellent spirits and good health. They have no specific complaints, and there are no apparent problems developing." That's the end of the quote. We're about 40 seconds away from a call up by Capcom. So, we'll stand by. At the Guam station we should be in contact for about 7 minutes. Standing by for a call up by Capcom Bill Thornton.

CC Skylab, AOS Guam, 6 minutes.

SPT Roger, Houston.

CC Skylab LOS in 1 minute. Honeysuckle at 00:22.

SPT Roger. Did you get the CD o[illegible],.

CC That's affirmative.

SPT All righty.

CDR Do we just leave it at zero all by ourselves?

CC Don't let them leave you there.

CDR Lots of luck.

PAO We've had loss of signal with the space station from the Guam tracking site, but we'll pick up again at the Honeysuckle site in about 4-1/2 minutes. At that time we'll have about, roughly 3 minutes of time where we will be in communication. We'll leave the line up, and wait for the Capcom call up through the Honeysuckle site.

END OF TAPE

SL-II MC-1002/1
Time: 19:18 CDT 22:00:18 GMT
6/14/73

CC Skylab, Houston. AOS for 3 minutes.
CDR Roger.
CC CDR, Houston.
CDR Speak, sweet lips.
CC I've been called a lot of things. Did you finish M553, Wheel 2, today?
CDR This is a very, very slow process. Let me tell you where I am, and what the problems are. There's something in there that really outgasses, Bill, and I can make about one bloody ball, and then I got shut the whole operation down for about 2 hours. So I'll tell you where I am on wheel 2. I've made the three balls that are on the hard sting. But unfortunately, I think the electron beam gun is pooping out. I can't even get anything to melt without showing 80 millivolts and what's happening is that this material is fairly hard, I gather, from the stuff that we melted yesterday, and it does essentially the same thing. It melts and it's just about ready to go into a sere and I got it pointed exactly right, I'm convenced, right on the top third and it's just about to go the sphere when this thing retracts and shuts the gun off. I wind up with a part of a half melted cylinder and a half a sphere down at the base, and - But I'm working my way through it, slowly.
CC Okay. There was another question on it. Did the 5 KVA high voltage go off nomonaly or did you have to pull main battery circuit breaker this time?
CDR Sometimes it does and sometimes it doesn't and then it is the function of the vacuum in there, I'm sure. And what I've done now, is I just - I do one or two and I see the vacuum drawing up and once it gets to .1 or above why, there's no sense messing with it. And if I shut it off at that point and then leave it alone it outgasses. It will go up even higher and it outgasses for awhile and goes on vacuum again. That's why I say it's about a 2 hour cycle. So it's in there and I'll go make a ball every time I pass by and check the vacuum and see how it's doing, and if I can make one, I make one, and if I can't, why, you know, I go do something else. So it's still in there, and I've got 200 things and the three arc ones are made, and that's where I am.
CC Okay, Pete. Thank you very much, and we'll be going LOS here momentarily and have you again at Vanguard at 00:50.
CDR Okay.
PAO With the loss of signal from the Honeysuckle station we believe that this will be our last communication with the Skylab crew for this mission day.

SL-II MC-1002/2
Time: 19:18 CDT 22:00:18 GMT
6/14/73

That is mission day 21. Although in the next 21 of so minutes there is a skip across the Vanguard station. A very brief period of time, when we could be in communication with Skylab. According to the flight plan, however they are scheduled for their presleep activities. The flight controllers here have been polled by Flight Director Don Puddy and all of them indicated that the systems were in the proper configuration for a period of rest as far as the crew is concerned, so it's doubtful whether we will have any more air to ground. At 29 minutes into the new day. At the end of mission day 21. This is Skylab Control.

END OF TAPE

SL-II MC-10C3/1
Time: 19:48 CDT 22:00:48 GMT
6/14/73

PAC This is Skylab Control at 49 minutes Greenwich mean time. We're approaching the Vanguard tracking station. We may have communication with the crew. We'll keep the line up for any air to ground that should transpire.

CC Skylab, Houston. AOS for approximately 3 minutes.

PLT Roger. S073 is running.

CC Copy.

SPT Houston, SPT.

CC Go, SPT.

SPT You can tell Mr. Stanley that his experiment came through in good shape. It is off and running also.

CC I'm sure he'll appreciate. We'll pass it on.

CDR Houston, CDR.

CC Go, CDR.

CDR We've been having a very serious discussion. We want to make sure, make very sure that Ticonderoga has a large enough supply of butter cookies onboard handle us.

CC Hey, Pete, I tried to eat them out of those things and never could. So, I'm very sure they'll have enough for you.

CDR Thank you.

CC Pete, I didn't realize that you were a classics scholar also. I take it that was Chaucer you were quoting to me the last time.

CDR I don't really know.

CC Tomorrow we are sending you up a new set of detail pads. And S07323 is what we'll be running. We're about to go LOS here, and so good night to you all.

CDR Good night.

PAO We have had loss of signal at the Vanguard tracking ship. Capcom passed the crew a good night. And so we can say with some confidence at this time that this really is the end of mission day 21. At 55 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE